Paid for ted. Only data not available in engineers' handbooks desired.

These data sheets are intended to be cut into four sections, 6 x 9 inches in size. They may then be bound into note-book form for convenient reference, by means of staples inserted in holes punched at the points indicated. A suitable binder for these data sheets will be supplied for 25 cents, which has an open back and will hold an indefinite number of 6 x 9 sheets, depending on the length of staples used.

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WORMS AND WORM GEARING.

C. P. Circular Pitch.	N Threads per Inch.	D. P. Diametral Pitch.	H Tooth above Pitch Line,	D Working Depth of Tooth.	C Clearance.	S Depth of Space below Pitch Line.	W. D. Whole Depth of Tooth.	T Thickness of Tooth on Pitch Line.	W Width of Thread Tool at End.	B Width of Thread at Top.
C. P. Inches.	$N = \frac{1}{C.P.}$	$D.P. = \frac{\pi}{C.P.}$	$H = \frac{1}{D.P.}$	$D = 2 \times \frac{1}{D.P.}$	$C = \frac{1}{8} \times \frac{1}{D.P.}$	$S = H + C$	$W.D. = D + C$	$T = \frac{C.P.}{2}$	$W = .3148 \times C.P.$	$B = .3354 \times C.P.$
2	1–2	1.5708	.6366	1.2732	.0795	.7161	1.3527	1.0000	.6296	.6708
1¾	4–7	1.7952	.5570	1.1141	.0696	.6266	1.1837	.8750	.5509	.5869
1½	2–3	2.0944	.4775	.9549	.0596	.5371	1.0145	.7500	.4722	.5031
1¼	4–5	2.5133	.3979	.7958	.0497	.4476	.8455	.6250	.3935	.4192
1	1	3.1416	.3183	.6366	.0397	.3580	.6763	.5000	.3148	.3354
3–4	1⅓	4.1888	.2387	.4775	.0298	.2685	.5073	.3750	.2361	.2515
2–3	1½	4.7124	.2122	.4244	.0265	.2387	.4509	.3333	.2098	.2236
1–2	2	6.2832	.1592	.3183	.0199	.1791	.3382	.2500	.1574	.1677
2–5	2½	7.8540	.1273	.2546	.0159	.1432	.2705	.2000	.1259	.1341
1–3	3	9.4248	.1061	.2122	.0132	.1193	.2254	.1666	.1049	.1118
2–7	3½	10.9956	.0909	.1819	.0113	.1022	.1932	.1429	.0899	.0958
1–4	4	12.5664	.0796	.1591	.0099	.0895	.1690	.1250	.0787	.0838
2–9	4½	14.1372	.0707	.1415	.0088	.0795	.1503	.1111	.0699	.0745
1–5	5	15.7080	.0637	.1273	.0079	.0716	.1352	.1000	.0629	.0670
1–6	6	18.8496	.0531	.1061	.0066	.0597	.1127	.0833	.0524	.0559
1–7	7	21.9911	.0455	.0910	.0056	.0511	.0966	.0714	.0449	.0479
1–8	8	25.1327	.0398	.0796	.0049	.0447	.0845	.0625	.0393	.0419
1–9	9	28.2743	.0354	.0707	.0044	.0398	.0752	.0555	.0349	.0372
1–10	10	31.4159	.0318	.0637	.0039	.0357	.0676	.0500	.0314	.0335
1–12	12	37.6992	.0265	.0530	.0033	.0298	.0563	.0416	.0262	.0279
1–14	14	43.9824	.0227	.0454	.0028	.0255	.0482	.0357	.0224	.0239
1–16	16	50.2655	.0199	.0398	.0024	.0223	.0422	.0312	.0196	.0209
1–18	18	56.5488	.0176	.0352	.0022	.0198	.0374	.0277	.0174	.0186

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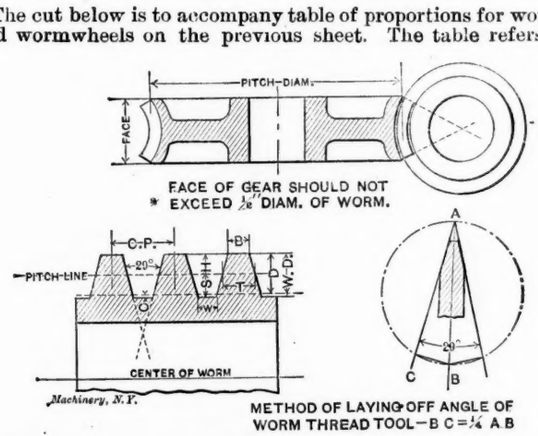
WORMS AND WORM GEARING.

The cut below is to accompany table of proportions for worms and wormwheels on the previous sheet. The table refers to



METHOD OF LAYING OFF ANGLE OF WORM THREAD TOOL—B C = ¼ A B

single threads only. For multiple threads divide the sizes given in the table for the same pitch, by 2 for double, 3 for triple, 4 for quadruple threads, etc.

TO FIND THE PITCH DIAMETER.

(Given Pitch and number of Teeth).

RULE.—Multiply the number of teeth by the circular pitch and divide by 3.1416.

EXAMPLE.—Number of teeth, 96; circular pitch, ¼. Then $96 \times \frac{1}{4} = 24$. $24 \div 3.1416 = 7.639$ = pitch diameter.

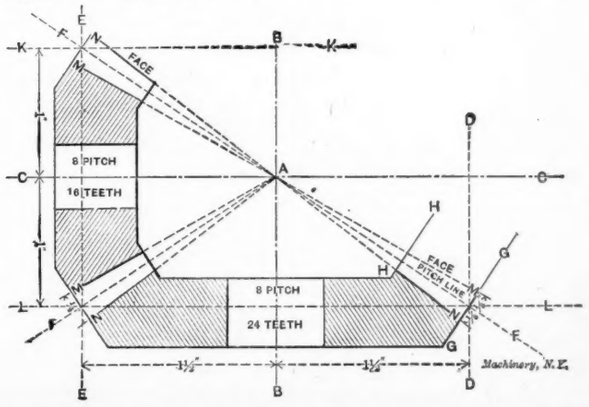
NOTE.—Diameter of hob equals diameter of worm plus twice the clearance "C."

BEVEL GEARS.

In laying out bevel gears, an engraving of which is given herewith, first decide upon the pitch, and draw the center lines B B and C C, intersecting at right angles at A. Then draw the lines D D to E E the same distance each side of B B and parallel to it; the distance from D D to E E being as many eighths of an inch—if it be 8 pitch—as there are to be teeth in the gear. In the example the number of teeth is 24; therefore the distance from D D to E E will be $\frac{3}{8}$, or 1⅛ inches each side of B B. K K and L L are similarly drawn, but there being only 16 teeth in the small gear, the distance from K K to L L will be $\frac{1}{8}$, or 1 inch each side of C C. Then through the intersections of D D and L L, E E and L L, and E E and K K, draw the diagonals F A. These are the pitch lines. Through the same point draw lines as G G at right angles to the pitch lines, forming the backs of the teeth. On these lines lay off ⅛ of an inch each side of the pitch lines, and draw M A and N A, forming the faces and bottoms of the teeth. The lines H H are drawn parallel to G G, the distance between them being the width of the face.

The face of the larger gear should be turned to the lines M A, and the small gear to N A. For other pitches the same rules apply. If 4 pitch, use 4ths instead of 8ths; if 3 pitch, 3ds, and so on.

Bevel gears should always be turned to the diameters and angles of the drawings.



In publishing the above data on bevel and worm gearing, and the table on the previous sheet upon worm gearing, we have departed from our usual custom by taking the matter from a catalogue—that of the Warner & Swasey Co., Cleveland, O. We have been informed by this firm that these sheets have been the subject of a great many inquiries from persons who have found the information of special value for reference, and at their suggestion we are using the matter this month for two of our data sheets.